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LM02/1110

EXAMINER

AZAD, A

ART UNIT	PAPER NUMBER
2741	10

DATE MAILED: 11/10/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No. 09/048,076	Applicant(s) Maeda et al.
Examiner ABUL K. AZAD	Group Art Unit 2741

Responsive to communication(s) filed on Mar 26, 1998

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claim

- Claim(s) 1-6 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 Claim(s) \_\_\_\_\_ is/are allowed.  
 Claim(s) 1-6 is/are rejected.  
 Claim(s) \_\_\_\_\_ is/are objected to.  
 Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

- See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.  
 The drawing(s) filed on Mar 26, 1998 is/are objected to by the Examiner.  
 The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.  
 The specification is objected to by the Examiner.  
 The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).  
 All  Some\*  None of the CERTIFIED copies of the priority documents have been received.  
 received in Application No. (Series Code/Serial Number) \_\_\_\_\_  
 received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- Notice of References Cited, PTO-892  
 Information Disclosure Statement(s), PTO-1449, Paper No(s). 8, 9  
 Interview Summary, PTO-413  
 Notice of Draftsperson's Patent Drawing Review, PTO-948  
 Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. Figure 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sign word i of the Gray code minimizes Euclidian distance from the said input vector must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### *Claim Rejections - 35 USC § 101*

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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4. Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 1-6, the “act” of the claimed process manipulate only numbers, the acts are not being applied to appropriate subject matter (a physical input and output). Thus, a process consisting solely of mathematical operations, i.e., combinations of factors respectively multiplied by a plurality of basic vectors are changed according to the Gray code, does not manipulate appropriate subject matter and thus cannot constitute a statutory process. For example a physical input are audio signals.

5. An invention may be patented only if it falls in one of the four statutory class of subject matter or 35 U.S.C. 101 *Kewanee Oil Co. V. Bicron Corp.*, 416 U.S. 470,483,181 USPQ 673,679 (1974). The CCPA stated that “any process, machine, manufacture, or composition of matter constitutes statutory subject matter unless it falls within a judicially determined exception of section 101.” *In re Pardo*, 684 F. 2d 912, 214 USPQ 673, 677 (CCPA 1982). The claims are directed to non-statutory subject matter because the claimed subject matter falls within the mere idea or abstract intellectual concept exception to U.S.C. 101.

6. Descriptive material that cannot exhibit any function interrelationship with the way in which computing process are performed does not constitute a statutory process. Non-functional descriptive material stored on a medium is merely carried on the medium, it is not structurally or functionally interrelated to the medium. The allowance of such a claim would exalt form over substance. See Guidelines IV.B.1(a)-(b).

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***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerson (U.S. Pat. 4,817,157).

As per claim 1, Gerson teaches, "a vector search method comprising the steps of calculating a difference error between a prediction vector and an input vector so that combinations of factors respectively multiplied by a plurality of basic vectors are changed according to the gray code" (Abstract, Fig. 3).

As per claim 2, Gerson teaches, "an intermediate value  $G_u$ , obtained by calculation of a synthetic vector created according to a sign word  $u$  of the Gray code, is expressed by an intermediate value  $G_i$ , obtained by a calculation of a synthetic vector created according to an adjacent sign word  $i$  different from said sign word  $u$  only in a predetermined bit position  $v$ , and a change  $G_u$  calculated by utilizing the Gray code characteristic, and

said  $G_u$  is used to express a change  $G_u'$  between an intermediate value  $G_i'$  according to another sign word  $i'$  in said Gray code and an intermediate value  $G_u'$  according to an adjacent sign word  $u'$  different from said sign word  $i'$  only in a predetermined bit position  $v$  (col. 7, line 13 to col. 8, line 41).

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As per claim 3, Gerson teaches, "said prediction vector is created through a prediction synthesis filter by synthesizing said synthetic vector and vector based on a past signal from a sound source (col. 11, lines 29-43)

As per claim 4, Gerson teaches, "said sign word u' in said Gray code difference from said sign word u only in one bit position w, excluding the predetermined bit position v, and said change Gu' is expressed as a sum of said change Gu already obtained according to said sign word u of said Gray code and a difference between said change Gu and said change Gu'" (col. 13, lines 37-68).

As per claim 5, Gerson teaches, "the calculating of the difference error between said prediction vector and said input vector includes minimizing said difference error and is a calculation to determine a synthetic vector from synthetic vectors created by synthesizing basic vectors for the sign word I of the Gray code that maximizes an inner product with said input vector, and

said inner product is expressed by using two variables Ci and Gi, as  $[Ci^2/Gi]$  Ci<sup>2</sup>/Gi, whose value is made maximum" (col. 11, line 28 to col. 14, lines 46)

*Allowable Subject Matter*

9. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims; and also if rewritten to overcome the rejection(s) under 35 U.S.C. 101, set

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forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abul K. Azad whose telephone number is **(703) 305-3838**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth, can be reached at **(703) 308-4825**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**

**(703) 308-9051, (for formal communications intended for entry)**

**Or:**

**(703) 305-9508 (for informal or draft communications, please label**

**"PROPOSED" or "DRAFT")**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to  
the Group Receptionist whose telephone number is **(703)305-3900**.

Abul K. Azad

November 5, 1999

  
DAVID R. HUDSPETH  
SUPERVISORY PATENT EXAMINER  
GROUP 2700